

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Please amend the claims such that they read as follows:

Claim 1 (currently amended): A method for obtaining apomictic plants from sexual plants comprising:

(a) obtaining two sets of diploid delineated sexual lines from an angiospermous plant species, genus, or family,

wherein such two sets of diploid delineated sexual lines express differences in ~~their~~ flowering responses to various photoperiods and

such that initiation of embryo sac formation in one ~~of said sets~~ set of diploid delineated sexual lines occurs at about the same time as or before meiosis in the other ~~of said sets~~ set of diploid delineated sexual lines relative to developmental maturity of nongametophytic ovule and ovary tissues; and

(b) hybridizing said two sets of diploid delineated sexual lines, recovering seed therefrom ~~from the hybridizing of the sets~~

~~of delineated lines~~, sowing said seed, and selecting diploid hybrid lines that express apomixis.

Claim 2 (currently amended): The method of claim 1 wherein the two sets of diploid delineated sexual lines ~~that express differences in flowering responses~~ are short-day plants.

Claim 3 (currently amended): The method of claim 1 wherein each of the two sets of diploid delineated sexual lines ~~that express differences in flowering responses~~ is of a different response type selected from the group consisting of short-day plants, long-day plants, dual-day-length plants, intermediate-day-length plants ambiphotoperiodic plants, and day-neutral plants.

Claims 4-7 (canceled).

Claim 8 (previously amended): The method of claim 1 wherein the nongametophytic ovule and ovary tissues comprise at least one member of the group consisting of nucellus, integument, pericarp, hypanthium, and pistil wall.

Claim 9 (previously amended): The method of claim 1 wherein the hybrid lines comprise genetic material from each set of delineated lines.

Claims 10-11 (canceled).

Claim 12 (previously amended): The method of claim 1 wherein said hybrid lines display a reproductive anomaly selected from the group consisting of apospory, diplospory, and polyembryony.

Claims 13-16 (canceled).

Claim 17 (currently amended): A method for obtaining apomictic plants from sexual plants comprising:

(a) identifying differences in flowering responses to various photoperiods within an angiospermous plant species, genus, or family;

(b) obtaining two sets of diploid lines of said plant species, genus, or family wherein said sets of lines differ in their flowering responses to various photoperiods;

(c) identifying differences within and between said sets of lines such that initiation of embryo sac formation in one ~~of said~~

~~sets~~ set of lines occurs at about the same time as or before meiosis in the other ~~of said sets~~ set of ~~delineated sexual~~ lines relative to developmental maturity of nongametophytic ovule and ovary tissues;

(d) obtaining two sets of diploid delineated sexual lines of said species, genus, or family that differ

in their flowering responses to various photoperiods and

such that initiation of embryo sac formation in one ~~of said~~

~~sets~~ set of delineated sexual lines occurs at about the

same time as or before meiosis in the other ~~of said sets~~

set of delineated sexual lines relative to developmental

maturity of nongametophytic ovule and ovary tissues; and

(e) producing diploid hybrid lines that express apomixis by hybridizing said two sets of diploid delineated sexual lines, recovering hybrid seed therefrom ~~from the hybridizing of said two sets of delineated sexual lines~~, sowing said hybrid seed, and selecting said diploid hybrid lines that express apomixis.

Claim 18 (currently amended): A method for obtaining aposporic, diplosporic, or polyembryonic plants from sexual monocotyledonous or dicotyledonous plants comprising:

(a) identifying differences in days to flowering or photoperiod required to induce flowering within an angiospermous plant species, genus, or family;

(b) obtaining two sets of diploid lines of said plant species, genus, or family such that said two sets of diploid lines differ in their days to flowering or photoperiod required to induce flowering;

(c) identifying within and between said two sets of diploid lines differences in start times and durations of female or seed developmental stages selected from the group consisting of archespore formation, megasporogenesis, ~~megametogenesis~~ megagametogenesis, and early embryony relative to the development of nongametophytic ovule and ovary tissues selected from the group consisting of nucellus, integument, pericarp, hypanthium, and pistil wall;

(d) obtaining two sets of diploid delineated sexual lines of said species, genus, or family such that said sets of delineated sexual lines differ

(i) in ~~by~~ their days to flowering or photoperiod required to induce flowering, and

(ii) such that initiation of embryo sac formation in one ~~of said sets~~ set of diploid delineated sexual lines occurs at about the same time as or before meiosis in the other ~~of said sets~~ set of

diploid delineated sexual lines relative to developmental maturity of nongametophytic ovule and ovary tissues; and

(e) producing progeny by sexual reproduction of said two sets of diploid delineated sexual lines such that apomixis is expressed in said progeny.

Claims 19-33 (canceled).

Claim 34 (currently amended): A method for producing apomictic plants from sexual plants comprising:

(a) obtaining two sexual diploid lines, of the same angiospermous species, genus, or family, whose female reproductive phenotypes differ such that under similar environmental conditions initiation of embryo sac formation in one of said sexual diploid lines occurs at about the same time as or before meiosis in the other of said sexual diploid lines relative to developmental maturity of nongametophytic ovule and ovary tissues; and

(b) hybridizing the two sexual diploid lines by plant breeding, obtaining diploid progeny therefrom ~~from such hybridizing of the two sexual lines~~, and selecting apomictic plants from among said diploid progeny.

Claim 35 (currently amended): A method for obtaining apomictic plants from sexual plants comprising:

(a) obtaining two sets of diploid delineated sexual lines from an angiospermous plant species, genus, or family selected from families that exhibit apomixis in nature, wherein said sets differ in days to flowering or photoperiod required to induce flowering and

such that initiation of embryo sac formation in one ~~of said sets~~ set occurs at about the same time as or before meiosis in the other ~~of said sets~~ set relative to developmental maturity of nongametophytic ovule and ovary tissue; and

(b) hybridizing said sets, recovering seed therefrom ~~from the hybridizing of the sets~~, sowing said seed, and selecting diploid hybrid lines that express apomixis.

Claim 36 (currently amended): A method for obtaining apomictic plants from sexual plants comprising:

(a) obtaining two sets of diploid delineated sexual lines from an angiospermous plant species or genus selected from the grass family, wherein said sets differ in days to flowering or photoperiod required to induce flowering and

such that initiation of embryo sac formation in one ~~of said sets~~ set occurs at about the same time as or before meiosis in the other ~~of said sets~~ set relative to developmental maturity of nongametophytic ovule and ovary tissue; and

(b) hybridizing said sets, recovering seed therefrom ~~from the hybridizing of the sets~~, sowing said seed, and selecting diploid hybrid lines that express apomixis.

Claim 37 (currently amended): A method for obtaining apomictic plants from sexual plants comprising:

(a) obtaining two sets of diploid delineated sexual lines from an angiospermous plant species or genus selected from the Asteraceae family, wherein said sets differ

in days to flowering or photoperiod required to induce flowering and

such that initiation of embryo sac formation in one ~~of said sets~~ set occurs at about the same time as or before meiosis in the other ~~of said sets~~ set relative to developmental maturity of nongametophytic ovule and ovary tissue; and



(b) hybridizing said sets, recovering seed therefrom ~~from the hybridizing of said sets~~, sowing said seed, and selecting diploid hybrid lines that express apomixis.

Claim 38 (currently amended): The method of claim ~~2~~ 1 wherein the differences in flowering responses are measured in days to flowering.

Claim 39 (canceled).

Claim 40 (currently amended): The method of claim 1 wherein the two sets of diploid delineated sexual lines ~~that express differences in flowering responses~~ are long-day plants.

Claim 41 (currently amended): The method of claim 1 wherein the two sets of diploid delineated sexual lines ~~that express differences in flowering responses~~ are dual-day-length plants.

Claim 42 (currently amended): The method of claim 1 wherein the two sets of diploid delineated sexual lines ~~that express differences in flowering responses~~ are intermediate-day-length plants.

Claim 43 (currently amended): The method of claim 1 wherein the two sets of diploid delineated sexual lines ~~that express differences in flowering responses~~ are ambiphotoperiodic plants.

Claim 44 (currently amended): The method of claim 1 wherein the two sets of diploid delineated sexual lines ~~that express differences in flowering responses~~ are day-neutral plants.